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I, Wayne E. Nacker, Wayne E. Nacker, reg. No. 29,571, certify that I have deposited this document with the United States Patent and Trademark Office on 30 May 2006 by facsimile, 571 273 8300.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Application No 10/506,412 (conf 8468)

Filed 25 July 2005

Applicants: Smith et al.

For: FUEL CELL MEMBRANES AND CATALYTIC LAYERS

Art Unit 1762

Examiner: Fredrick J. Parker

## Amendment in Response to Office Action of 24 April 2006

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is in response to the Office Action dated 24 April 2006.

Please cancel Claims 1-32 as currently on file and replace them with new claims 33-44 presented herewith as appendix A.

Replacement paragraphs intended to obviate the informalities in the Specification are attached hereto as appendix B.

The invention, as currently claimed, describes a method, and apparatus for effecting the method, in which, in a single gas stream (a single continuous process), catalyst is deposited on the surface of support particles to produce supported catalyst, the supported catalyst is mixed with polymer, and the mixture is deposited on a substrate. The claimed method and apparatus is not obvious over Singer (US4177159) in view of Kemp (US3857737) or further in view of Hunt et al. (US6132653).

It is respectfully submitted that the Examiner is misapplying *in re Tatincloux 108 USPQ 125* (Paragraph 11 of the Examiner's action) to the method of the present invention. The continuous gas stream method of forming a catalytic layer of the present invention does not merely involve combining sequential operations into a simultaneous operation, e.g., the operation of Kemp and the operation of Singer, or for that matter, the operation of Hunt et al.

The Singer process teaches mixing polymer and supported catalyst in a blender. Then the particles (at least the PTFE particles) are broken up in either a Jet-O-Mizer (Col. 3, lines 32+) or a Waring Blender (Col. 4, lines 41+). Even if Singer were to use the pre-formed supported catalyst of Kemp, the Singer process still requires both an initial blending step that is not performed in a gas stream that leads to deposition, and a fragmentation step (gas stream or non-gas stream), neither of which the much more efficient process of the present invention requires.